

2004 EDUCATION AND TRAINING PROGRAMMES

DATE	COURSE	LOCATION	CONTACT
19/02	CIRCLY Workshop (CPEE)	Brisbane	Ed Butler
1-4/03	Quality—People & Process Workshop	Brisbane	Leanne Lappin
15-19/03	Road Construction Workshop 2	Brisbane	Clare Foster
22-26/03	Technology Professional's Introduction to Main Roads & Qld Transport	Brisbane	Clare Foster
23/03	Sprayed Sealing Design	Brisbane	Ed Butler
24/03	Sprayed Sealing Field Procedures	Brisbane	Ed Butler
TBA/03	SCENARIO Software User Training	Brisbane & Regional Centres	Tony Tam
TBA/03	Road Planning and Design Manual Detailed Training Chaps 5-7,9-12&15	Regional Basis	Owen Arndt
TBA/03	Quality in Construction Forum	Brisbane	Russell Wilson
21-22/04	Where to From Here Workshop - ISO 9000:2000 concepts	Brisbane	Leanne Lappin
27-28/04	Insitu Stabilisation (CPEE)	Brisbane	Ed Butler
28-29/04	Internal Quality Auditor Workshop	Brisbane	Leanne Lappin
TBA/04	Pavement Management Training	Brisbane	Tony Tam
5/05	ISO 9000:2000 Workshop	Brisbane	Leanne Lappin
10-14/05	Road Construction Workshop 1	Brisbane	Clare Foster
31/05-4/06	Bridge Construction Workshop	Brisbane	Clare Foster
1/06	Selection of Road Surfacing	Brisbane	Ed Butler
2/06	Asphalt Placement & Compaction	Brisbane	Ed Butler
29/07	Working Safely With Bitumen	Brisbane	Ed Butler
4-6/08	RS&E Technology Forum	Bardon, Brisbane	Clare Foster
6/08	Asphalt – Selection and Specification for Best Value	Brisbane	Ed Butler
18-19/08	Internal Quality Auditor Workshop	Rockhampton	Leanne Lappin
25-26/08	Where to From Here Workshop - ISO 9000:2000 concepts	Brisbane	Leanne Lappin
31/08-2/09	Bituminous Surfacing – Principles & Practice	Brisbane	Ed Butler
14/09	ISO 9000:2000 Workshop	Townsville	Leanne Lappin
5-6/10	Internal Quality Auditor Workshop	Brisbane	Ed Butler
12/10	Pavement Maintenance Practices	Brisbane	Ed Butler
13/10	Pavement Maintenance – Rehabilitation & Asset Management	Brisbane	Ed Butler
25-28/10	Quality—People and Process Workshop (Residential)	Brisbane	Leanne Lappin
10/11	Road Asset Management (CPEE)	Brisbane	Ed Butler
24-25/11	Where to From Here Workshop - ISO 9000:2000 concepts	Brisbane	Leanne Lappin

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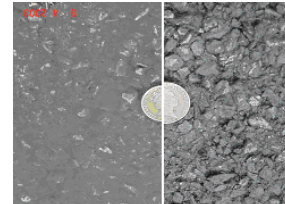


Articles in this and prior newsletters available on the web site at <http://www.aapa.asn.au/docs/queensland.html> and on Main Roads Intranet at <http://pmg>

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Issue 3 of 2003

Inside this issue: *Treatment of Flushing Seals*



Donna Edwards and David Hamilton report on their trials in the Peninsula District pages 2 & 3

Training & Course Timetables from AAPA & QDMR for 2004 are on page 4



Seasons Greetings from the Strategic Alliance Chairman and the Board

Articles for publication in the Newsletter are always welcome. Please send to: aapa-qld@bigpond.com or allan.g.bell@mainroads.qld.gov.au

CONSULTATION AND SETTING THE "APPROVAL" RULES

A new "Registration system for Approved Asphalt Suppliers" has been the biggest project tackled by the alliance since its inception. It has been driven by a common desire to see a uniform Queensland – wide approach to the selection of asphalt suppliers and a review of asphalt mix approval system.

With the active support of staff of both partners and under the guidance of consultant Trevor Parminter the new system will be up and running early in 2004.

Projects of this nature require lots of individual effort and the Alliance acknowledges those that have contributed the over 600 volunteer hours that have been put into the project so far.

Jointly setting the rules for a new approval system has proved a model of consultation and sharing of ideas. An example was the recent Metro District sponsored review of their surveillance approach and the opportunities it offers the rest of the State. With representation of asphalt suppliers from all over the State, open and honest sharing was the order of the day and the partners are strengthened through the effort.

Updates on the introduction of the new system will be circulated in February 2004.

Barry Rule QDMR Project Team Leader

TWO YEARS OLD !!!

Since the signing of the agreement two years ago the Main Roads and Australian Asphalt Pavement Association has come to realise the real challenges of bringing divergent views and approaches closer together. It has been heartening to see the support for, and acceptance of, the alliance goal of better performing pavements within a sustainable business environment.

2003 has seen a drive into the regions and districts to promote an understanding of the Strategic Alliance activities and the improved relationships that it encourages. It has been good to see the way members of both organisations are using the alliance principles in their dealings and the initiatives of the regions to take ownership of their own contact meetings.

2004 will see a new Chairman of the Board from Main Roads and a new director from AAPA with projects on SMA, the Register and Sprayer Calibration at the implementation stage. A Reference Group meeting is planned in the week starting 5 April and there will be a seminar / workshop in North Qld during September

Strategic Alliance Managers: Ian Reeves & Rob Vos

TREATMENT OF FLUSHED SEALS

Donna Edwards & David Hamilton—Peninsula District

A full technical paper on this topic is available from the Editors or the Authors

The Peninsula District of Main Roads have undertaken trials to look at ways to improve the condition of flushed seals.

Three methods were trialed:

1. kerosene enrichment with heated stone
2. dry matting - heating the existing seal and applying new stone
3. water-blasting the excess bitumen

The underlying idea behind the methods 1 & 2 was to put life back into the bitumen so that a fresh application of stone would adhere to the excess bitumen. Method 3 was aimed at removing the excess bitumen rather than utilization. Below is a summary of key points for each treatment.



Site South of Deeral 2 months after the Kerosene treatment. Some flushing reoccurring on the

KEROSENE ENRICHMENT

The following procedure was used:

1. Spray 0.2 – 0.3 L/m² of kerosene in flushed wheel paths (0.9 to 1.2m wide)
 2. Lightly spread 7mm or 10mm* heated aggregate onto the sprayed surface
 3. Roll heated aggregate into free binder (pedestrian steel drum then multi-tyred roller - MTR)
 4. Sweep the surface
- Spread rates were roughly calculated to be 280m²/m³ for the 10mm and 305m²/m³ for the 7mm/10mm mix.
 - The aggregate was heated by dry running through an asphalt plant. The recorded temperature of the aggregate in the truck ranged from 150 – 160 deg C.
 - The most critical factor in this treatment was the weather. During the trial road temperature ranged from 55 – 60 deg C. Later trials conducted at lower temperatures were not as successful showing lower stone retention rate.
 - The cost of the treatment was approximately \$2.00 - \$3.00 per m² of treated surface.

Note:* The stone size was varied to suit the availability of free bitumen. After a visual inspection of the flushed sections a stone size was selected based on the theoretical spray rate (calculated from ALD) required for a seal. It was estimated that to use a 10mm stone, 1.0L/m² of bitumen or more, equating to 1.0mm of free bitumen on the surface was desirable to hold the stone. Similarly, it was judged that to use a 7mm stone, 0.3L/m² of bitumen or more (i.e. 0.3mm of free bitumen on the surface) was needed. On this trial we found that using a 10mm/7mm mix of stone on most of the sections gave optimal results in stone retention for the amount of free bitumen present.

DRYMATTING

The following procedure was used:

1. Apply 7mm or 10mm cover aggregate
2. Heat the existing seal covered with newly applied aggregate to approx. 180 deg C
3. Roll aggregate into heated binder (pedestrian steel drum then MTR)
4. Sweep after the surface has cooled down

A Wirtgen Panel Heating Machine was used to heat the existing seal through LP gas fuelled infrared heating units .



Before and after shots of the 10mm aggregate dry matting treatment. The left photograph shows the extent of the flushing occurring in the existing seal prior to treatment. As can be seen, there would have been less than 1mm of free bitumen on the surface and this resulted in some stripping of the applied 10mm later during the day.

- Capable of treating widths from 3.2m to 4.5m
- Typical speed of 200 – 350 metres per hour.
- The treatment can be carried out under damp or cool conditions.
- Selection of stone size based on the amount of free bitumen present (as per kerosene enrichment trial).
- Spread rates used for 10mm were 167, 149, 198m³/m² with 198m³/m² spread rate most successful
- Spread rates used for 7mm were 264, 233, 280m³/m² with 280m³/m² spread rate most successful
- The cost of the treatment was approximately \$2.00 per m² of treated surface.

WATER TEXTURISING

The water texturising truck applies water at a high pressure (typically 10,000 – 14,000 PSI) from three heads located at the rear (see picture below). The dirty water containing the removed bitumen is then vacuumed back into the truck which has a storage capacity of about 4500L. The three heads can treat 650mm, 1300mm or 1950mm wide per pass. The vehicle moves at a walking pace with the operator adjusting the water pressure, movement of the heads, truck speed and direction from controls at the rear of the vehicle. The truck is able to operate under damp and cool conditions

and even light rain.

- Solid waste and dirty water are temporarily retained by the truck. Disposal and proper treatment of the solid and liquid wastes accounted for approximately 14% of the project cost.
- Best results were achieved on the chip seals with an improvement in surface texture in the order of 0.55 – 1.12mm and the stone mastic asphalt with an improvement of 0.45 – 0.64mm.
- As the chip seals were a 2nd coat seal additional care had to be taken with the water pressure to ensure the integrity of the seal was not damaged. Treatment is not recommended for 1st coat seals and caution should be used when treating 2nd coat seals.
- In general, best results were achieved when the water texturising truck operated during night or the cooler hours of the day. At these times, the road temperature was lower, allowing the binder to be removed from the surface without moving the binder deeper down.
- The cost of the treatment varied substantially depending on the width treated and location of the site. The cost of the asphalt roundabouts was \$3.50 - \$5.50 per m² of treated surface. The cost of the chip seals was approximately \$6.50 per m² of treated surface.

